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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/758,679 | 01/11/2001 | Clinton A. Staley | 08822-051001 | 9548 |

7590 06/29/2004

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| EXAMINER |
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WOO, STELLA L

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2643 | |

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/758,679

Applicant(s)

STALEY, CLINTON A.

Examiner

Stella L. Woo

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-44 is/are allowed.
- 6) ☒ Claim(s) 1-3, 14-21, 30, 31, 39 and 40 is/are rejected.
- 7) ☒ Claim(s) 4-13, 22-29 and 32-38 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 2643

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 14-21, 30-31, 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bird (US 5,784,476) in view of Frindle et al. (US 5,923,767, hereinafter "Frindle").

Bird discloses a computer processor method comprising:

receiving amplitude versus time values for said audio signal (analog input audio signal received at input 40; Figures 2 and 3);

determining an envelope (via amplitude analyzer 42; col. 3, lines 41-44);

determining respective minimum and maximum multiplication factors (multiplying factors are determined so that the output is above the too-quiet threshold and below the too-loud threshold; col. 4, line 58 – col. 5, line 25); and

creating a control signal function (amplitude analyzer 52 calculates what the volume position should be and sets a multiplying factor; col. 6, line 20 – col. 7, line 30).

Bird differs from the claims in that it does not specify the control signal function having reduced slopes. However, Frindle teaches the desirability of the applied gain in a digital audio processing method having reduced slopes (Abstract; col. 2, lines 27-36) in order to reduce

Art Unit: 2643

audible distortion (col. 2, lines 34-36) such that it would have been obvious to an artisan of ordinary skill to incorporate such "soft knee" processing, as taught by Frindle, within the method of Bird in order to reduce the rate of change of gain slope, thus, reducing the audible distortion which results from an abrupt change of gain.

Regarding claims 14 and 39, Frindle teaches a logarithmic converter (col. 1, lines 35-39, 64-67).

Allowable Subject Matter

3. Claims 4-13, 22-29, 32-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 41-44 are allowed. The prior art fails to teach or fairly suggest a first or second convex hull calculation for specifying y values in a method of creating reduced-slope series of line segments.

Conclusion

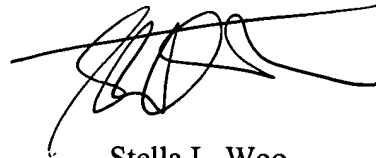
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lubbe et al., Frindle et al., Lin et al., Hoshino et al. and Smart et al. show other dynamic range control systems.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stella L. Woo whose telephone number is (703) 305-4395. The examiner can normally be reached on Monday-Tuesday, Thursday-Friday.

Art Unit: 2643

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'Stella L. Woo', written over a horizontal line.

Stella L. Woo
Primary Examiner
Art Unit 2643